Discussion Paper

Trends and Issues in Post-Secondary Education

1989 to the year 2000

Alberta
ADVANCED EDUCATION

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INTRODUCTION

This discussion paper highlights ten selected trends which are influencing post-secondary education in Alberta and which are expected to continue to affect it in the years ahead. Implications and issues associated with the trends are identified.

Many of the trends raise important questions on student accessibility, educational quality and accountability for public funds. A central theme is how the predominantly board-governed post-secondary system can maintain quality and accessibility, while responding to competing demands for new and more specialized educational services during a time of fiscal restraint.

Based on the trends and issues, the Minister has identified goals and a series of priorities which the system needs to address.

It is anticipated that the paper will provide a focus for discussion of the major issues facing post-secondary education in the province.

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TREND: Demographic Shifts

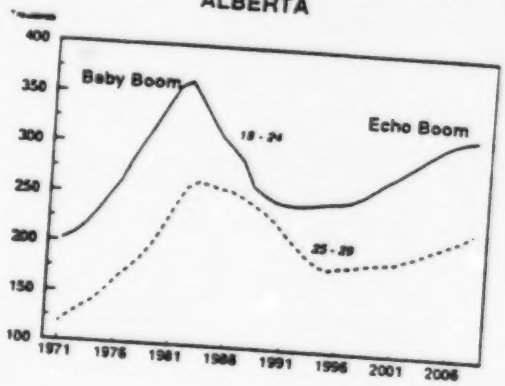
- The population of 18-24 year olds is continuing to decline and in 1990 will enter a trough that will last for 6 years.

- The 25-29 population is also declining. This group will, in 1994, reach a trough that lasts until 2001.

- The peak of the echo baby boom will not enter the 18-24 group until 2000.

- The 15-24 age group's share of the population is expected to drop to 15% by 2000, down from 22% in 1978.

POPULATION 18-24 AND 25-29
ALBERTA



IMPLICATIONS

A. University Level Education

- The need for, and interest in, university education will remain high but the major population pool from which students are drawn will be lower over the next 6-8 years.

- More students will be drawn from non-traditional sources. Assuming the economy remains stable, university enrolment will likely peak in 1989 at a little over 50,000 but will remain at near record levels. Demand will remain around this level for much of the time up to 1998.

- The echo baby boom will tend to push up enrolment beginning around 1998 and lasting until about 2008.

- Notwithstanding a flattening of enrolment growth, demand will likely exceed the supply of spaces in some regions and for some popular programs.

B. Colleges and Technical Institutes

- Demand in some programs will remain high, that is, up-grading, skill retraining, ESL, technology based programs.

- Some certificate and diploma programs may become less attractive to students.

- There will be continuous pressure to introduce longer programs which are competitive with university programs (3 year programs and a greater role in university level education).

- Retraining and older students will receive increasing attention.

C. Overall

- The proportion of people seeking some form of post-secondary education will continue to increase. The population decline will be offset by growing demand.

ISSUES

- What planning activity needs to take place in anticipation of the echo boom?

- What adjustments can or should be made if enrolments continue to increase in the next 5-6 years, contrary to expectations?

- What role should be played by the public colleges, non-resident institutions, and others in university level education?

TREND: Increases in Enrolments

- Full-time enrolment at universities increased by nearly 14,000 students (46%) between 1979-80 and 1988-89.

- Full-time enrolment at public colleges increased by approximately 9,800 students (100%) between 1979-80 and 1988-89.

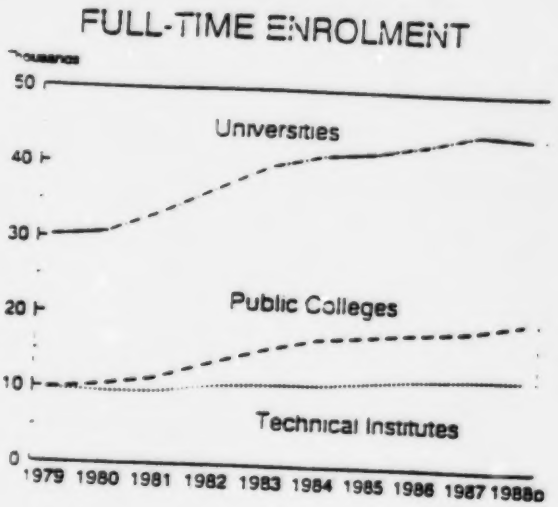
- Full-time enrolment at technical institutes increased by approximately 2,300 students (24%) between 1979-80 and 1988-89.

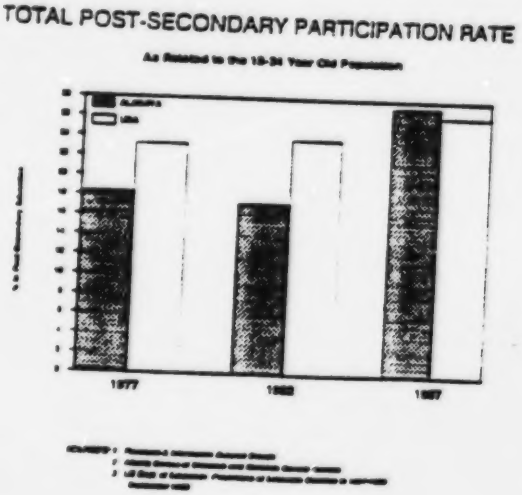
- At the PAIs, Full Time Equivalent (FTE) enrolment increased by almost 2.4 times between 1979-1980 and 1987-88.

- Full-time post-secondary enrolment has grown to the point where Alberta's participation rate matches that of the U.S. (about 28%).

- Intensive competition for jobs during the 1980's has convinced young people of the need to secure education and to update their skills.

- Children tend to match or exceed the educational attainment of their parents.





- The student body is becoming more diverse, that is, more older students, more part-time students, more disabled students.

- The Canadian government predicts 64% of all jobs created between 1986 and 2000 will require more than 12 years of education: half will require more than 17 years.

IMPLICATIONS

- Universities have responded to enrolment pressure with higher admission standards, changes in quotas and additional quotas.
- Enrolment pressures have increased in the public colleges with many programs over-subscribed.
- Technical institutes have adjusted their program mix as a result of new demands and a decline in demand for some technologies/trades programs. Demand for most programs remains high.
- Most institutions offer extensive continuing education programs.
- Students increasingly mix work with study and thus take longer to graduate.
- Most university, technical institute, and public college programs now have quotas or enrolment limits leading to a loss in flexibility and "reserve capacity" to take additional students.

ISSUES

- Although enrolment demand is expected to flatten in aggregate, there will continue to be unmet regional and/or program demands. How will resources be reallocated?
- How can the government's policy on access be sustained? Can qualified and motivated students secure access? Are high entrance requirements acceptable? Are bricks and mortar the only answer? Would a central registration system significantly improve the management of accessibility?
- How can institutions be assisted to adapt to serve an increasingly diverse and specialized student body?
- What actions might be required to ensure continued university accessibility for college/university transfer students?
- Does the current block-fund grant mechanism effectively support accessibility and programming objectives?
- How can programs be rationalized across institutions as part of an effort to maintain and enhance quality, and to sustain accessibility? Will the system respond to the need to plan and program cooperatively?
- Does student finance eliminate barriers to access? Does it do so efficiently and cost-effectively? Should Alberta assistance be available regardless of where students study?

TREND: Increasing Educational Standards

- 64% of all jobs created between now and the year 2000 will require some level of post-secondary education; 30% of Canada's (and Alberta's) youth fail to graduate before leaving high school; older unemployed persons will require basic literacy as well as new job skills; and 11% of Albertan's aged 15 years or over have less than a grade 9 education. Three-quarters of these are at least 45 years old.

- Many natives have low educational levels. In 1981, 41% had a less than grade 9 education. Only 2.3% have a university degree, compared to 11% of non-natives.

- Immigrants (14% of whom have no education in their own language - typically refugees and older immigrants who have come to Canada to join families) have special educational needs.

- More disabled students are completing high school and are seeking post - secondary education.

- As the rate of growth in the labour force slows, Alberta employers will increasingly draw more heavily on immigrants, natives, the disabled and other groups traditionally less well represented in the labour force. At the same time, employers are requiring higher educational standards.

IMPLICATIONS

- The need for academic upgrading and related programs such as ESL and special literacy programs will increase.

- Native students require transitional programming as well as programs and services which are responsive to their culture and needs.

- Small business lacks the resources and experience for training and looks to government for help.

- There is an increasing requirement for special support services and appropriate facilities for the disabled. New educational technologies can help to assist the learning of disabled persons.

ISSUES

- How can the serious under-representation of natives in post-secondary education be redressed?
- Few institutions are able to offer services for the blind, deaf or learning disabled. What can be done to enhance this access?
- How should literacy programming across government be coordinated?
- Can/should volunteer literacy training expand beyond the current 52 projects, serving 2500 illiterates?
- What changes to, or new programs are required to facilitate the credentialling of immigrant specialists?
- How are the increasing demands for English as a second language to be met?
- How can the confusion and ineffectiveness of the shared federal/provincial responsibility for funding native students be addressed?

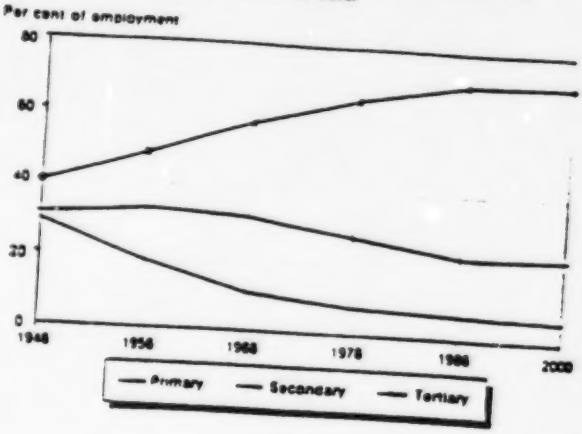
TREND: Competitive World Trading Blocks

- There is growing focus on value-adding and enabling technologies.

- Alberta is heavily reliant on exports to secure economic growth. Alberta's merchandise exports totalled $13 billion in 1988. Exports of services such as engineering and consulting are growing in importance.

- Public concern over an environmentally sound, sustainable economic base is increasing.

Shift in Employment Structure by Industrial Sector, 1946-2000
Source: Statistics Canada, *Labour Force Survey Employment and Immigration System, Canadian Occupational Projection System (COPS)*



- Employment growth is in the service sector. Service sector jobs grew by 27.2% (1981-88) in Alberta.

IMPLICATIONS

- There will be increased demand for well educated and trained manpower.

- Requirements for academic upgrading, specialized vocational training and a scientifically trained work force will increase.

- The internationalization of the curriculum will grow.

- The demand for environmental programming will become stronger.

- In response, a knowledge based economy requiring "mental" rather than "manual" skills will increase.

ISSUES

- What role should post-secondary institutions play in meeting the training/ retraining needs of industry? What are the implications of pending UIC changes?

- What is the role of university basic research and the department's policy/ responsibility with respect to it?

- How will Alberta attract promising researchers during a time of world wide shortage of researchers and faculty?

- How will the research aspirations of the University of Alberta and the University of Calgary be addressed?

- How can programs be kept current? What type of new programs might be required?

TREND: Economic Development and Diversification

- Value-added activities associated with base primary activities are increasing (for example, agricultural processing, oil refineries, oil sands development / OSLO).
- There is increasing development of new industries (for example, forestry/ pulp and paper, advanced technology companies, tourism).
- Change is occurring from the rationalization / mechanization of agriculture.
- Consolidation in the conventional oil industry can be seen.
- International trade is recognized as increasingly important.
- All levels of government are involved in the encouragement of small business.

IMPLICATIONS

- As a result of major construction projects, the demand for workers in the trades is rising.
- The focus on applied research and the commercialization of results makes the need more important to link basic and applied research.
- Industry and business demand for technologically trained workers is increasing.
- Demands increase for new programs at a time of fiscal restraint.
- There is a greater need for retraining.
- Declining agricultural enrolments are seen at colleges.
- Entrepreneurship training is being promoted.

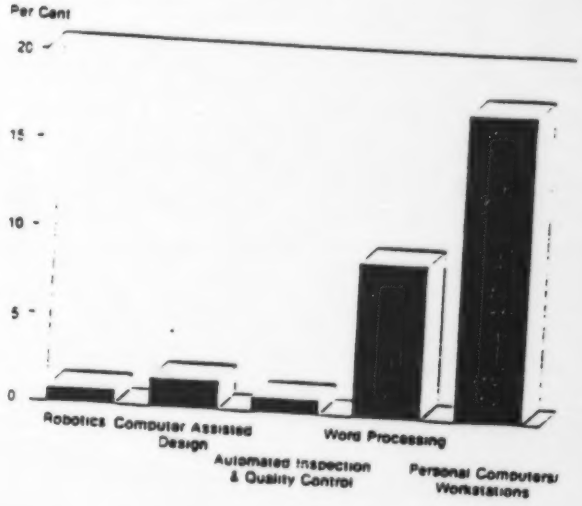
ISSUES

- What program adjustments are necessary to support training for forestry/pulp and paper, OSLO, and other economic diversification initiatives?
- How should Advanced Education relate to the applied research mission of TRT?
- What activities would enhance cooperative planning by government and institutions?
- How are skill shortages to be anticipated and addressed (for example, science and technology, teachers, tradesman, etc.)?
- Should Advanced Education be more involved in the approval of third-party sponsored ad hoc programs (for example, AVT, CJS) to address funding and program coordination?

TREND: Changes in Content and Types of Jobs

- Many workplace skills are becoming obsolete; new technologies are introducing new occupations and changing existing ones.
- There is continued demand for career training.
- There are continuing demands from employers for specialized post-secondary programs.
- Since 1981, nearly all of the 1.25 million net new jobs in Canada were in the service sector. The service sector accounts for 70% of all employment in Alberta.

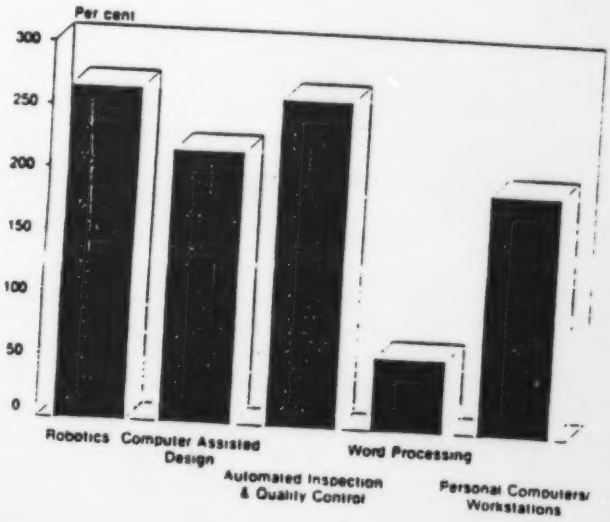
Estimated Percentage of Workers Using Selected Technologies, 1990
Source: Economic Council of Canada, unpublished data



IMPLICATIONS

- Re-entry programming for displaced employees will be required.
- An increasingly mature student body will mean changes in student assistance and support facilities (for example, day care).
- Emphasis on part-time study opportunities and new educational technologies increase need for revisions to curriculum.
- Funding will be needed to maintain technological currency (for example, equipment, staff).
- There is an increased role for public institutions in industry based training and other forms of cost-recovery programs.

Estimated Percentage Increase in the Use of Selected Technologies, 1985-90
Source: Economic Council of Canada, unpublished data



- Expansion in private sector training and program delivery can be seen.

ISSUES

- What is the department's position on cooperative education and how should the cost of work study programs be shared among students, employers and taxpayers?

- What is the role of private colleges, private vocational schools? What is Advanced Education's role with respect to them?

- How can the system ensure that students are trained on technologically current equipment?

- What steps may be required to support access for older students and part-time students?

TREND: Regionalization

- The increasing participation rate of rural Albertans and regionalization of trades and apprenticeships has seen the development of non-urban institutions and satellite campuses.
- Regionalization of university transfer is occurring.
- Development and growth of Community Consortia and Further Education programs are evident.
- Shortages of skilled workers and professionals exist as a result of social and economic development in rural Alberta.
- Residential universities experience difficulties in responding to off-campus needs.

IMPLICATIONS

- There is a continuing demand for high cost satellite campuses.
- Demand for degree granting capability outside major urban centres is rising.
- Communities express a desire for on-site professional programming for local students.
- Delivery of programs by out-of-province institutions in some centres may meet needs.
- The requirement is increasing for cooperative planning between universities and transfer colleges.

ISSUES

- How are the demands for post-secondary education in rural Alberta to be met? What role can out-of-province institutions play in providing university level programs? How can Advanced Education ensure the credibility and transferability of programs offered by out-of-province institutions? How should they be regulated? Should the tuition policy for off-campus programs be changed?

- What configuration of programs should be developed at non-urban public colleges?

- How can the increasing pressure for program funds and administrative support for both Consortia and Further Education Councils be met?

- What role can distance education technologies play in delivering university and non-university programs to rural and remote areas?

- What steps can be taken to help resolve regional issues?

TREND: Participation by Women in the Labour Force and Post-secondary Education

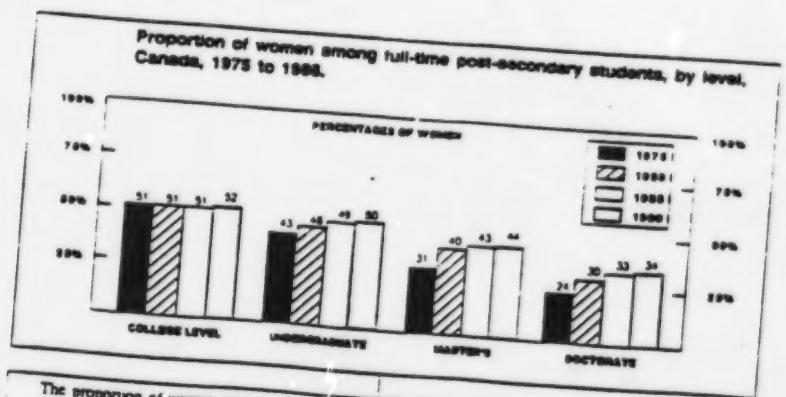
- Alberta has the highest female labour force participation rate of any province.
- Women expect to maintain a long term attachment to the labour force.
- Women have increased their participation in post-secondary education. They make up half of total undergraduate university enrolments.

IMPLICATIONS

- Women are well represented in most colleges and at the undergraduate level but are not as well represented at graduate school and in certain science and engineering programs.
- There is an increasing demand for skill updating and career advancement training to help women build careers.

ISSUES

- What measures should be taken to increase the number of women enrolled in science, engineering and related programs? In senior administrative posts in post-secondary institutions?
- Are new or different programs and services required to address the special needs of immigrant and native women and single mothers?



The proportion of women among full-time university students has grown steadily. The progress made at the undergraduate and master's levels should soon be reflected at the doctorate level.

TREND: Increasing Complexity and Cost of Capital

- Programs and research have become complex requiring increasingly sophisticated and costly equipment and purpose-built facilities.

- The province's level of new construction has been very high over the last decade. Including equipment, the current value of the capital asset inventory in the system is approximately $4 billion.

- The full funding level required to replace assets on a regular basis was never reached; government funding for upgrading and replacement of assets declined from a high of $62 million in 1985-86 to a low of $32.5 million in 1988-89.

IMPLICATIONS

- Government has added to the provincial stock of assets, especially new buildings, while the flow of funds intended to maintain the effectiveness of that asset pool has been reduced.

- Equipment required for instructional and research purposes is becoming obsolete at an increasing rate.

- The current level of funding for replacement of equipment ($19.3 million out of $34 million) does not provide sufficient funds to replace equipment inventories which are 10 years old (approximate replacement value $33.6 million) and does not supply a replacement fund for current equipment inventories ($56.7 million).

- Another very significant but longer term impact is the deferral of building maintenance as institutions concentrate their funds on replacement of equipment and interior renovations designed to meet immediate needs. This is a particular problem for older institutions.

- Increasingly, budget requests of institutions will reflect major equipment needs and significant renovation and building restoration.

ISSUES

- How will the technological currency of programs be maintained?
- How can capital formula funding be adjusted to ensure the maintenance and currency of the $4 billion in assets in the system?
- How is the growing backlog of building restoration and deferred maintenance to be addressed?
- How should student housing funding policies be adjusted to ensure that maintenance is not neglected?
- How can the system ensure that researchers have access to the equipment they require given the increasing cost of scientific equipment?

TREND: Continuing Fiscal Restraint

- Government grants have not kept up with cost pressures in post-secondary institutions which are primarily a function of manpower costs. Restraint budgets (i.e.,increases at or below the rate of inflation) are likely to continue in the near term.

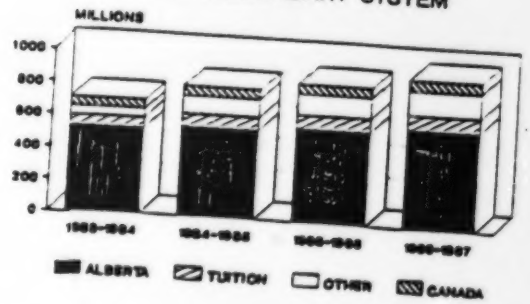
- Government grants have dropped as a percentage of total institutional revenue. Government revenues were 84% in 1982-83 and are estimated to be 72% in 1988 - 89.

- Institutions have responded by securing alternative revenue sources such as donations, ancillary activities, extension, and other ventures. Since 1982-83, these other sources have increased four-fold while total revenues have not quite doubled.

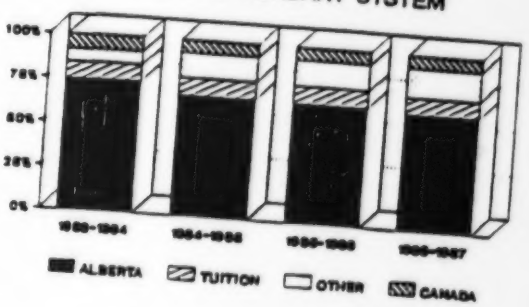
- Tuition has increased from 8.1% of operating revenues in 1982-83 to 11.2% of operating revenues in 1987-88.

- After sharp increases, the number of students receiving financial assistance and the expenditures for need-based assistance are levelling off.

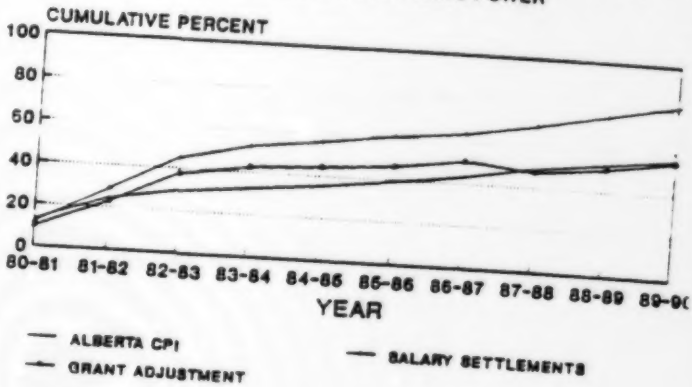
REVENUE GROWTH
POST-SECONDARY SYSTEM



REVENUE COMPOSITION
POST-SECONDARY SYSTEM



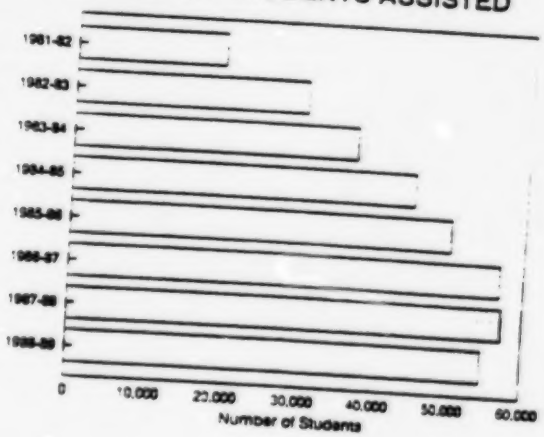
REAL LEVEL OF OPERATING GRANTS
REDUCTION IN PURCHASING POWER



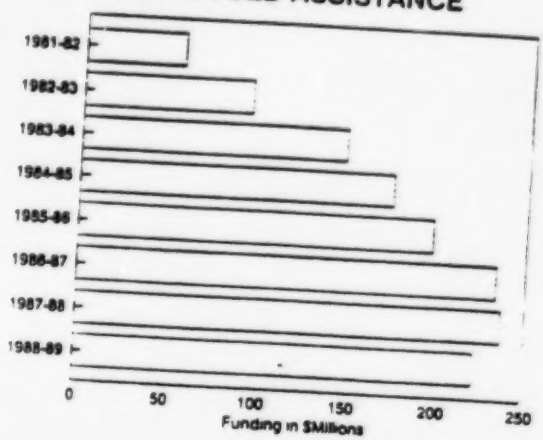
IMPLICATIONS

- Resource reallocation, rather than new funds, must be relied upon to maintain and improve quality.
- Tuition fees may need to play a larger role.
- There is an increasing need to ensure value for money and accountability for public funds.
- The need to contain the cost pressures of faculty salaries and rapid technological change presents a growing management challenge.
- Institutions are increasing their reliance on uncertain revenue sources.
- The link between quality and accessibility will receive increasing attention.

NUMBER OF STUDENTS ASSISTED



NEED-BASED ASSISTANCE



ISSUES

- At what point does the decline in real operating grants significantly impair educational quality, assuming enrolment policies do not change significantly?
- How is quality defined? How is it measured? How does the department ensure value for money?
- Should/would accountability be enhanced through a mandated program evaluation process?
- Post-secondary programs, especially those provided by public institutions, are perceived to be the responsibility of Advanced Education, regardless of who funds them. How does Advanced Education meet this expectation? Should it?

- What is the role of Advanced Education in the financial accountability of institutions?

- Institutions have adjusted to restraint largely by reducing expenditures on infrastructure (for example, libraries, student services). Should the system be concerned? What innovative steps should be taken?

- How can the department protect quality in the face of continued restraint (for example, institutional and program rationalization, alternative funding sources, access policy)?

- How can institutions prepare for the grey wave of faculty retirements in the 1990's and avoid the problem experienced in the 1960's?

- Should students bear a greater portion of the costs of their post-secondary education? If so, how much and how should student finance be adjusted? Can/should institutions be given more control over tuition?

- Will institutions respond to the need for increased fund raising activities beyond the matching capacity of the Endowment and Incentive Fund?

- Do emerging distance education technologies offer an effective means to reduce program delivery costs?

- At what pace will campus development needs be addressed?